

## A PRIMARY APPROACH IN UNDERSTANDING THE BASIC ACCOMPLISHMENTS AND FUNCTIONING OF THE NUTRITION REHABILITATION CENTRES IN THE TELANGANA STATE

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### ABSTRACT

*Malnutrition is a silent emergency and it is one of the most common causes of morbidity and mortality among children and adolescent throughout the world. Severe acute malnutrition (SAM) continues to be the reason for increasing hospitalization and also a major killer disease. The study shows the primary approach in understanding the basic accomplishments and functioning of the Nutrition Rehabilitation Centres in the Telangana State. A total of 60 under-five children were selected from 12 NRCs in Telangana State using purposive sampling technique. A questionnaire was used to collect data. Frequency distribution of treatment outcomes was calculated using descriptive statistics. From the studies and related analysis, it can be concluded that Nutritional rehabilitation Centre programme is highly effective and is supplementing the remedial and rehabilitation measures among the community remarkably well.*

**KEYWORDS:** Severe Acute Malnutrition & Nutritional Rehabilitation Center

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### INTRODUCTION

Malnutrition in children, particularly severe acute malnutrition (SAM), increases the risk of death from common childhood illnesses and contributes to 45% of deaths in children under five years of age (WHO, 2016a). Globally, as of 2016, an estimated 52 million preschool-age children were wasted, of which 17 million were severely wasted (UNICEF/WHO/World Bank, 2017). The majority of these children live in Asia, particularly Southern Asia where wasting has become a critical public health problem with a sub-regional rate of 15.4%.

Severe acute malnutrition is defined by a very low weight for height (below -3z scores of the median WHO growth standards), by visible severe wasting, or by the presence of nutritional oedema. It afflicts an estimated 8.1 million under-five children in India. Nearly 0.6 million deaths and 24.6 million DALYs (disability-adjusted life years) are attributed to this condition. Although the median under-five case fatality rate of severe acute malnutrition typically ranges from 30% to 50%, it can be reduced substantially when physiological and metabolic changes are taken into account. Management of severe acute malnutrition, according to WHO guidelines reduced the case-fatality rate by 55% in hospital settings and recent studies suggest that commodities such as ready-to-use therapeutic foods can be used to manage severe acute malnutrition in community settings. Severe acute malnutrition is a major public health issue.

Severe acute malnutrition is an important preventable and treatable cause of morbidity and mortality in children below five years of age in India. A number of state governments have taken the lead and are in the process

of scaling up the establishment of Nutrition Rehabilitation Centers (NRCs) with the intention to improve the quality of care being provided to children with SAM and to reduce child mortality.

**Nutrition Rehabilitation Center (NRC)** is a special unit in a health facility where children with Severe Acute Malnutrition (SAM) are admitted and services are dedicated to the initial management and nutrition rehabilitation. Children are admitted as per the defined admission criteria and provided with medical and nutritional therapeutic care. Once discharged from the NRC, the child continues to be in the nutrition, rehabilitation program till she/he attains the defined discharge criteria for the program. At a District Hospital/ Medical College Hospital, the NRC should have 10-20 beds, depending on the size of that ward. The unit should be in a distinct area within the health facility and should be in proximity to the pediatric ward/in-patient facility (Government of India, 2011).

There is a need for evaluation of one of the ongoing nutrition intervention programme like NRCs, initiated in the recent past, so as to take necessary steps to overcome problems in implementation and to take corrective measures for better monitoring and for fruitful improvement in nutritional status of beneficiaries.

## METHODOLOGY

### Sample Selection

A total of 12 Nutrition Rehabilitation Centers (NRCs) of Telangana State were selected. From each NRC 5 children total of 60 children was selected for the present study by adopting the purposive sampling method.

### Questionnaire

A structured questionnaire was prepared and used for the present baseline study.

### Survey Method Adopted

Personal interview method of data collection was applied to collect data from targeted respondents (mothers or caregivers) to understand the basic accomplishments and the functioning of the Nutrition Rehabilitation Centers.

### Data Analysis

The results of the collected data were statistically analyzed by using tabular and simple percentage method (Snedcor and Cochran, 1983).

## RESULTS AND DISCUSSIONS

**Table 1: The Criteria for Admission as an Inpatient**

Sl.No.	The Criteria for Admission as Inpatient (6-59 Months)	No.of Children(N=60)	
		Number	%
a	Mid upper arm circumference (MUAC) < 115 mm or 11.5 cm	3	5
b	Weight for height (WFH) < - 3 SD with or without any grade of oedema	38	64
c	Bilateral pitting oedema +/++ (children with oedema +++ always need inpatient care)	0	0
d	MUAC < 115 mm and WFH < - 3 SD	11	18
e	MUAC < 115 mm, WFH < - 3 SD and oedema	2	3
<b>The Criteria for admission as inpatient (&lt; 6 Months)</b>			
f	Infant is too weak or feeble to suckle effectively (independently of his/her weight for length)	3	5
g	Weight for length (WFL) < - 3 SD (In infants >45 cm)	0	0

Table 1: Contd.,			
h	Visible severe wasting in infants < 45 cm	3	5
i	Presence of oedema both feet	0	0

Table (1) shows admission criteria for SAM children into the NRCs. Sixty-four percent of children were admitted into NRC due to weight for height (WFH) < -3SD with or without any grade of oedema, 5% were mid-upper arm circumference (MUAC) < 115mm or 11.5, 18% were admitted for both the reasons of MUAC < 115 mm and WFH < - 3SD, 3% had MUAC< 115 mm, WFH < - 3 SD and oedema, 5% were admitted due to the infant being too weak or feeble to suckle effectively, and 5% were admitted by visible severe wasting in infants < 45 cm.

**Table 2: The Complications were Observed in the Child**

Sl.No	Complications	No.of Children (N=60)	
		Number	%
a	Anorexia (Loss of appetite)	10	17
b	Fever (39 degrees C) or Hypothermia (< 35 C)	12	20
c	Not alert, very weak, apathetic, unconscious, convulsions	13	21
d	Any other general sign that a clinician thinks requires admission for further assessment or care	7	12
e	Fever and severe dehydration based on history and clinical examination	7	12
f	Anorexia and Hypoglycemia	7	12
g	Anorexia, persistent vomiting and severe anemia	4	6

After the perusal of the table (2), various complications were observed in NRC admitted inpatient cases. Among the admitted people, those suffering from anorexia (loss of appetite) were 17%, fever (39<sup>0</sup> degrees C) or hypothermia (<35 C) were 20%, not alert, very weak, apathetic, unconscious and convulsions were observed in 21% of admitted people, 12% were admitted with general sign that a clinical expert thinks the child required admission for further assessment or care, 12% were admitted with fever and severe dehydration based on history and clinical examination, 12% anorexia, and hypoglycemia and 6% were observed with anorexia (loss of appetite), persistent vomiting and severe anemia.

**Table 3: Underlying Causes of Malnutrition were Observed in the Child**

Sl.No	Underlying Causes of Malnutrition	No.of Children (N=60)	
		Number	%
a	Low socio-economic status	8	13
b	Illiteracy	3	5
c	Frequent infections	6	10
d	Inadequate food intake, low socio-economic status, poor sanitation and illiteracy	4	7
e	Inadequate food intake, low socio-economic status, poor sanitation and ignorance of family members	7	12
f	Inadequate food intake, low socio-economic status and illiteracy	6	10
h	Low socio-economic status, poor sanitation and illiteracy	13	22
i	Inadequate food intake, low socio-economic status, poor sanitation, illiteracy and frequent infections	9	15
j	Inadequate food intake, low socio-economic status, poor sanitation, unavailability of health services and frequent infections	4	6

The underlying causes of malnutrition were detailed in the table (3). Thirteen percent of the admitted people were suffering from malnutrition due to low socioeconomic status, 5% due to illiteracy, 10% were by reason of frequent

infections, 7% were suffering due to inadequate food intake, low socio-economic status, poor sanitation, and illiteracy. Twelve percent of the admitted people were suffering from malnutrition due to inadequate food intake, low socioeconomic status, poor sanitation and ignorance of family members. Ten percent of the people admitted in NRC were because of inadequate food intake, low socio-economic status, and illiteracy. 22% were suffering from malnutrition because of low socioeconomic status, poor sanitation, and illiteracy. Fifteen percent were suffering from malnutrition due to inadequate food intake, low socio-economic status, poor sanitation, illiteracy and frequent infections. Due to inadequate food intake, low socio-economic status, poor sanitation, unavailability of health services and frequent infections 6% were suffering from malnutrition respectively.

**Table 4: Evaluation of the Functioning of the Nutritionist-Cum-Counsellor**

Sl.No	Evaluation of the Functioning of the Nutritionist -Cum-Counsellor	Yes (N=60)	
		Number	%
a	Was the child condition explained	57	95
b	Whether explained about the type of treatment planned	49	82
c	Obtaining admission in NRC is easy	39	65
d	Is there any payment for admission	38	63
e	Disease classified into any grade	44	73
f	Does the NRC provided a good environment to stay	58	97
g	Are you aware of type treatment being offered	54	90
h	Whether the MO examined the client at the time of admission	59	98
i	Whether the MO examined the child daily	57	95
j	Whether the MO is prescribing the medical treatment to the child	54	90
k	Is monitoring & progress of the child recorded every day	58	97
l	Are the individualized therapeutic diets planned & charted out by nutritionist	54	90
m	Were you explained about therapeutic diets	47	78
n	Was the food made and served hygienically	56	93
o	Whether the nutritionist monitor diet preparation every day	58	97
p	Whether the anthropometric measurements are taken regularly	55	92
q	Whether they making low cost locally available energy dense food	55	92
r	Whether they following cooking methods with minimal nutrient losses	58	97
s	Structured play therapy	58	97
t	Were you given opportunity to prepare therapeutic diets	43	72
u	Were the children given the stimulating toys to play	47	78

As per table 4, out of 60 attendants of the children, 57 were explained about the condition of their admitted child, 49 were explained about the type of treatment planned, 39 were told that obtaining admission in NRC was easy, 38 attendants were told that there was some payment required for admission. The disease was classified into different grades according to 44 attendants of the admitted children. Almost everyone in the study sample felt that the NRCs had provided a good environment to stay. As per GOI, 2011 guidelines NRC should have a cheerful, stimulating environment; it should be child-friendly. Walls can be brightly painted and decorated. Ward should have sufficient space for all mothers/caregivers staying with the children to sit together and be given cooking and feeding demonstration. Except for six of them, the remaining all was aware of the type of treatment being offered at NRC. Except for two of them, everyone was glad to see that their wards were examined by the MO at the time of admission. Out of 60 attendants, yet again 57 were pleased to see that their wards were examined by the Medical Officer on a daily basis, 54 respondents stated that MO gave them a prescription. According to 58 attendants, the monitoring and progress of the children were done at NRC. Out of 60 attendants, 54 had knowledge about the type of therapeutic diets planned for their children. About 7% of the mothers had no knowledge about the food made and served hygienically at NRC, and a good 93% of them had knowledge. Out of 60

attendants, 58 responded positively that the nutritionist had monitored the diet preparation every day. Ninety-two percent responded positively that the anthropometric measurements were taken regularly. They were making low cost - locally available energy dense food with respect to 55 attendants. Out of 60 respondents, 58 felt that they were cooking with minimal nutrient losses, 58 attendants stated that there was structured play therapy for admitted children. Out of 60, 43 were given the opportunity to prepare therapeutic diets. Forty-seven attendants expressed that their children were given the stimulating toys to play during their stay at NRC.

**Table 5: The Present Category of Malnutrition in Children**

Sl.No	Category of Malnutrition	No.of Children (N=60)	
		Number	%
A	Mild malnourished	19	32
B	Moderately malnourished	14	23
C	Severely malnourished	27	45

Table (5) shows the category of malnutrition in which the admitted child at present. Thirty-two percent were mild, 14% moderately malnourished and 27% were the severely malnourished category.

**Table 6: Screening Test Regularly was done at NRC**

Sl.No	Screening Test Regularly Done by	No.of Children (N=60)	
		Number	%
a	Medical officer	38	63
b	Nutritionist	14	24
c	Nurse	8	13

From the above table (6), it can be observed that out of 60 children 38 client's families informed that the screening test was conducted by MO, 14 stated that Nutritionist did the screening test for admitted children, and 8 of them indicated that nurse used to do the screening part.

**Table 7: Evaluation of Nutritional Treatment during the Stay at NRC**

Sl.No	Nutritional Treatment during the Stay	No.of Children (N=60)	
		Number	%
a	Nutrition screening of the child	8	13
b	Assessment of feeding problems & Diet counseling session to the mother	7	12
c	Nutrition screening of the child, assessment of feeding problems and feeding of modified diets	10	17
d	Nutrition screening of the child, assessment of feeding problems, feeding of modified diets and diet counseling session to the mother	35	58

Table 7 shows the evaluation of nutritional treatment during the stay at NRC. All the clients were undergoing all the four types of treatment during the stay at NRC.

**Table 8: Type of Diet Served Initially to the Client**

Sl.No	Type of Diet Served Initially	No.of Children (N=60)	
		Number	%
A	Fluid	26	43
B	Soft	15	25
C	Semi Solid	19	32

According to 43% of the respondents, fluids were served initially, 25% stated that soft food was served and 32% respondents had told that they were served semi-solid food (Table 8).

**Table 9: Medicines Given to the Clients**

SI. No	Medical Treatment	Yes (N=60)	
		Number	%
1	Iron syrup	60	100
2	Multi vitamin	57	95
3	Folic Acid	56	93
5	Zinc Sulphate	54	90
6	ORS	50	83
7	Anti biotics	54	90
8	Chioamphenicol	35	58
9	Contrimoxazola	6	10
10	Genmycin	8	13
11	Metronidazole	8	13
12	Tetra cyclin	5	8
13	Atropine	3	5
14	I.V Fluids	39	65

From the above table 9, it is perceived that all the medicines were available at NRCs. According to the client's health condition, the medicines were given to the inpatients.

**Table 10: Food Demonstration and Nutrition Counseling is given to the Clients**

SI.No	Activity	Nutritionist		Nurse		Cook Cum Attender	
		Number	%	Number	%	Number	%
a	Who will give the food demonstration (N=60)	33	55	13	22	14	23
b	Who will provide nutritional counseling	55	92	5	8	0	0

From the above table (10) nutritionists at NRCs had given food demonstrations according to 55% of attendants, nurse to 22% of respondents and cook-cum-attender gave food demonstrations according to 23% of client's families. Except for 8% of them, the remaining 92% of the clients were provided nutrition counseling by nutritionists at NRC.

**Table 11: The Visual Aids used for Nutrition Education**

SI.No	Type of Visual Aids	No. of Clients (N=60)	
		Number	%
A	Photos	6	10
B	Charts	21	35
C	Real foods	7	12
D	Photos and charts	7	12
E	Charts and real foods	8	13
F	Charts and books	4	7
G	Photos, charts and real foods	5	8
H	Photos, charts, real foods, and books	2	3

Table (11) shows the visual aids used for imparting nutrition education to the client's families. Ten percent of attendants were provided nutritional education with the aids like photos, charts used for 35% of attendants, real foods for 12%, photos & charts to 12%, charts and real foods for 13%, charts and books to 7%, photos, charts and real foods for 8% and maximum aids were used to educate 3% of the attendants.

**Table 12: Type of Counseling given to the Attendants**

Sl. No	Type of Nutritional Counseling Given	No. of Clients (N=60)	
		Number	%
a	Individual counseling	28	47
b	Group counseling	19	32
c	Individual & Group counseling	13	21
<b>Topics Covered</b>			
a	Balanced diet & Malnutrition	18	30
b	Hygiene & Sanitation	9	15
c	IYCF	11	18
d	All	22	37

Concurring table 12, its seen that type of nutritional counseling given was individual counseling in accordance with 47%, group counseling was provided for 32% of the attendants and both the group counseling and individual counseling was given for 21% of the attendants. Thirty percent of the attendants explained about the balanced diet and malnutrition, 15% were given education on hygiene & sanitation, 18% on IYCF and 37% were covered with all the topics.

## CONCLUSIONS

There is only one NRC at the each District Hospital for the entire erstwhile district that plays a major role in combating the issue of malnutrition but as the erstwhile district is big so the services are only utilized by the limited number of population. It would be of major help if such model is established at an area hospital on the other side of each district so that it will be reachable, and might even decrease the defaulter rate and dropouts.

As always, prevention is better than cure! What we need is the promotion of low- cost sustainable solutions like an optimal infant and young child feeding so that SAM does not occur. And encourage in preparation of nutritious diet with locally available energy-rich foods.

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